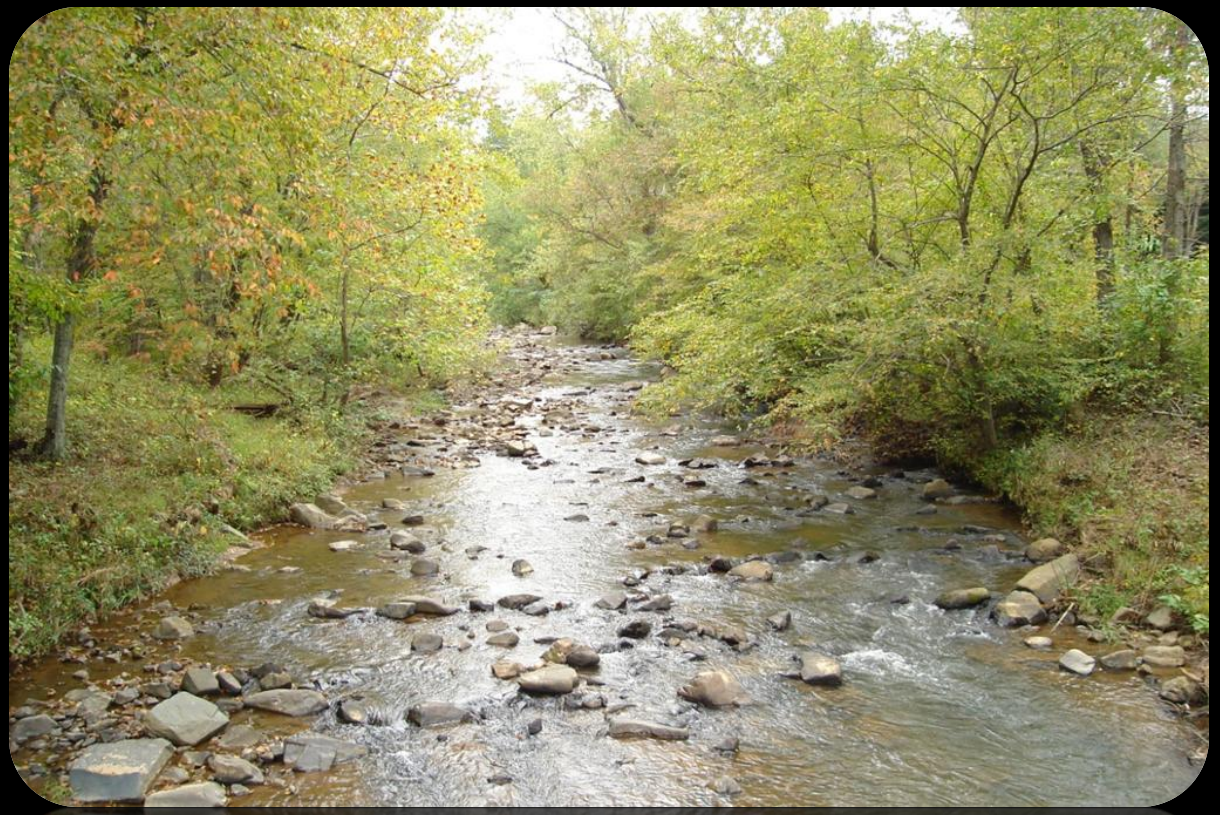
Crooked Run Community Meeting: AGENDA

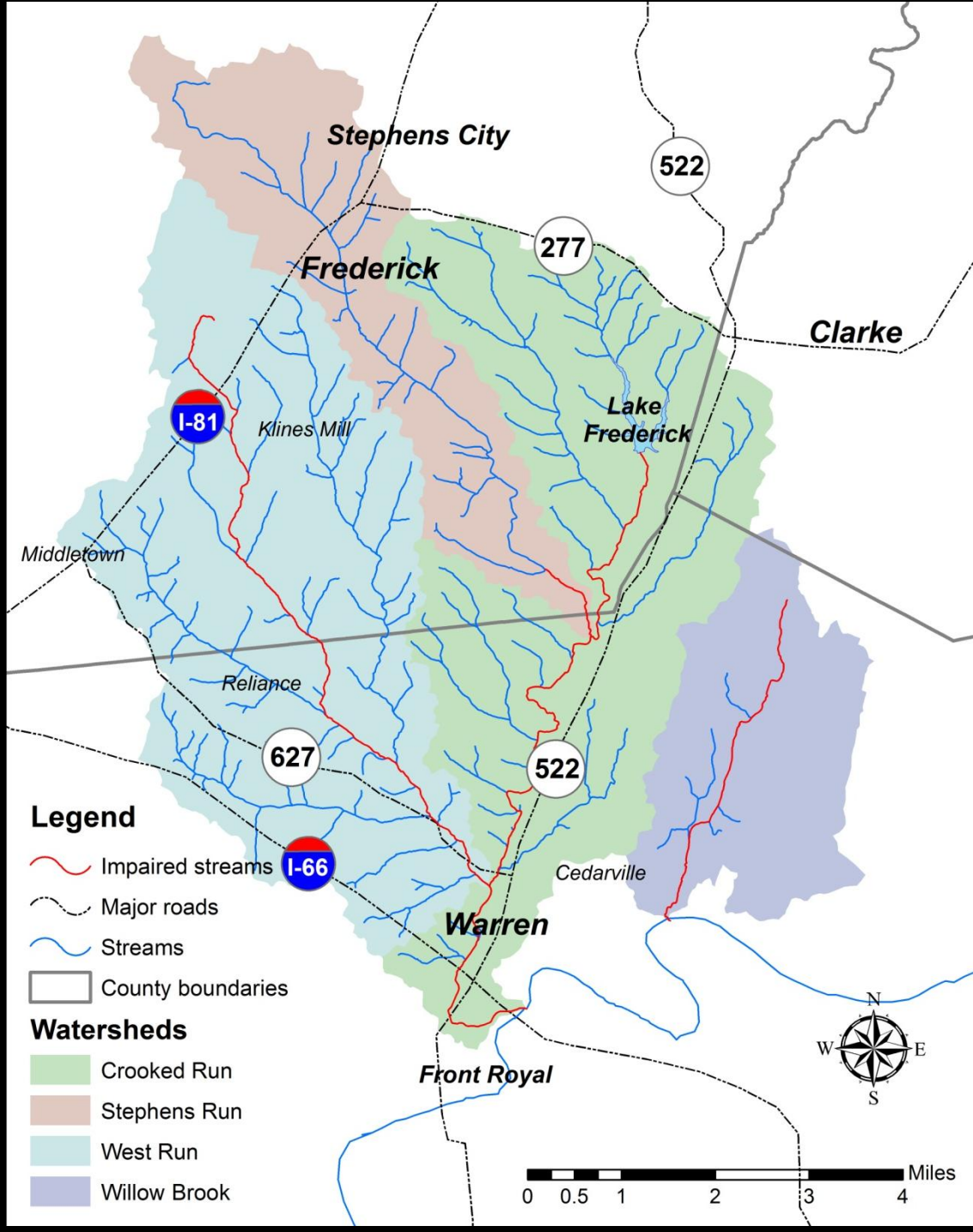
- Background on Crooked Run Clean Up Plan, Nesha McRae, VA Dept. of Environmental Quality
- Working Group Discussions
  - Agricultural Working Group: Facilitated by Nesha McRae
  - Residential Working Group: Facilitated by Tara Sieber, VA Department of Environmental Quality

Planning for Clean Water in Crooked Run and Willow Brook



Nesha McRae
Virginia Department of Environmental Quality
January 28, 2016

Crooked, Stephens, West and Willow Brook Watersheds



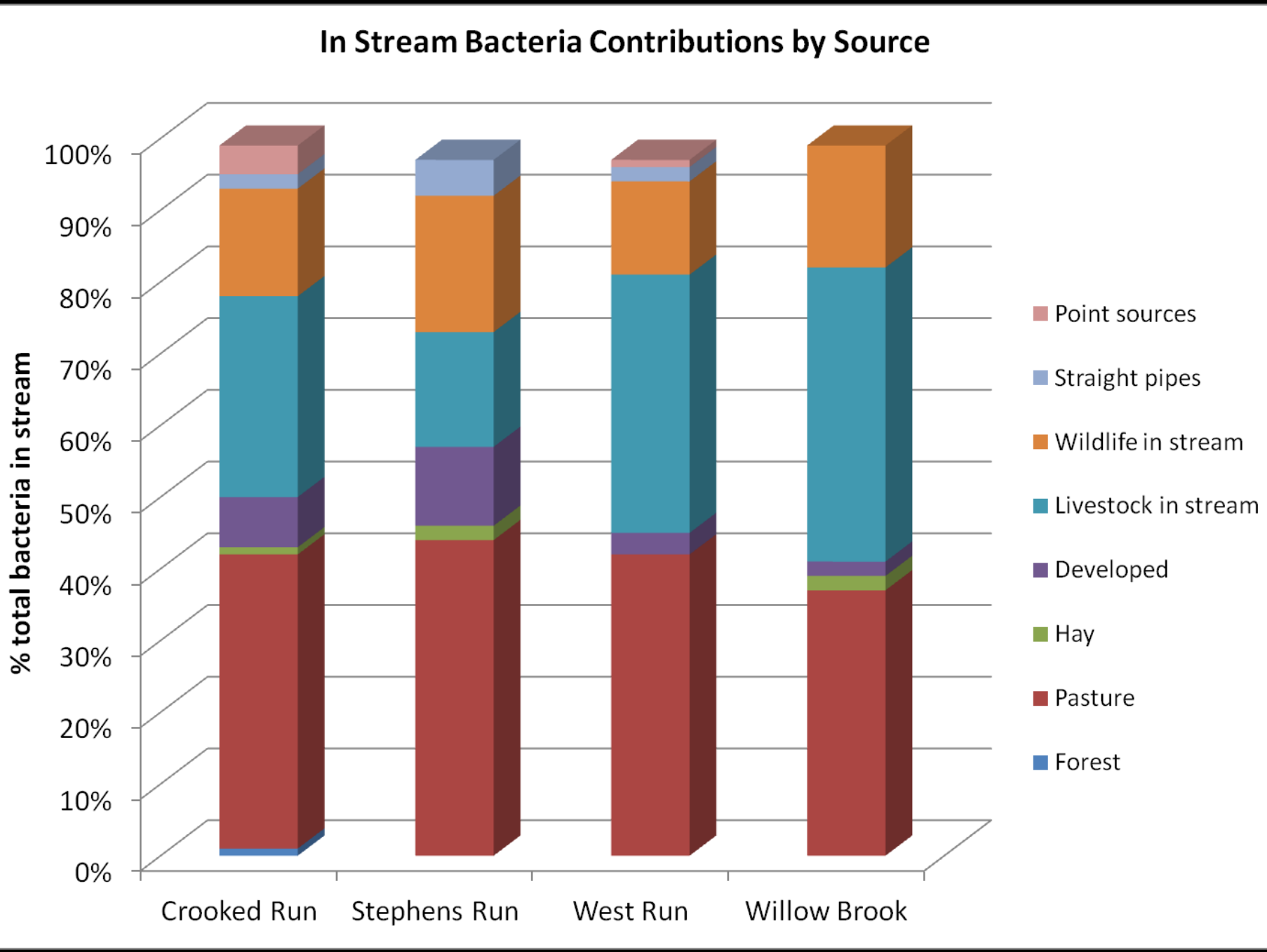
Why do we need a plan for clean water?

- Too much *E.coli*
  - Human health concern
    - Risk based standard
  - Indicator of pathogens in the water (viruses, protozoans, bacteria)
  - Impacts on livestock
    - >50% of cattle diseases in mid-Atlantic transmitted through fecal oral pathway (e.g. mastitis, foot and mouth disease, foot rot)


Photo: Center for Disease Control

What we know already…

- Study of the watersheds completed in 2014
- Conducted a "bacteria inventory"
- Created a model to predict how the creeks would respond to different conditions
- Divided up the "pollution pie"
  - Identified reductions needed
  - Stakeholder involvement
- We have a goal, now we have to figure out how to get there


In Stream Bacteria Contributions by Source
% total bacteria in stream
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Crooked Run
Stephens Run
West Run
Willow Brook
Point sources
Straight pipes
Wildlife in stream
Livestock in stream
Developed
Hay
Pasture
Forest

How the pie was split up:

Bacteria reductions needed

Watershed	% Reduction by Source				
	Livestock in stream	Pasture	Cropland	Straight pipes and failing septic	Residential
Crooked Run	45%	40%	10%	100%	5%
Stephens Run	20%	34%	10%	100%	5%
West Run	78%	43%	10%	100%	0%
Willow Brook	80%	35%	10%	100%	0%

Data from 2014 VA Department of Environmental Quality
Shenandoah Tributaries TMDL Study

Developing the Plan: Community Involvement

- Importance of local input
- Opportunities to participate
  - Public meetings
  - Working group meetings
  - Steering committee

What will go into the plan?

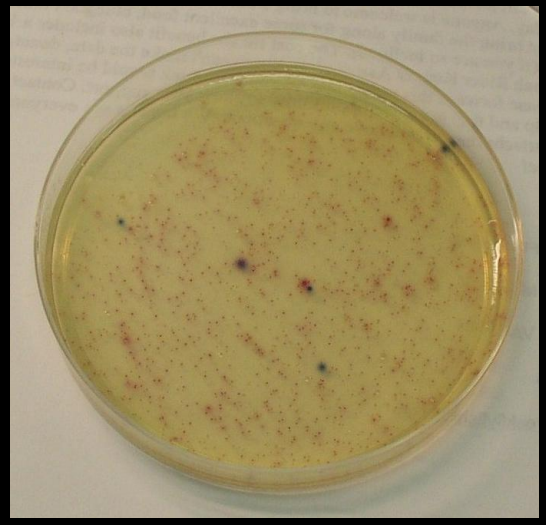
- What's already happening
- What else can be done and who can help do it
- How long it will take
- What kind of a difference it will make in water quality
- How we can pay for it
- How we can get the word out

Implementing the plan

- The most important step!
- Voluntary participation
  - Importance of buy in during planning
  - Incentive-based: financial and technical assistance
- Pursuing funding options
  - Existing funding available through NRCS and Lord Fairfax SWCD
  - Role of the steering committee?

What will be the challenges?

- Building trust
- Can't "see" bacteria
- Worst situations often the last to be fixed
- Paying for the work
- Finding straight pipes and failing septic systems
- Obstacles to livestock exclusion fencing



Bacteria in sample upstream of livestock access point

Bacteria in sample downstream of livestock access point

The good news…

- Nearly $1/2 M spent on agricultural BMPs in the watershed already
- Over 7 miles of streamside exclusion fence
- Over 1,000 acres of rotational grazing
- 33 acres of riparian buffers
- Over 1,100 acres of cover crops
- 180 acres permanent vegetative cover on cropland
- 2,700 acres nutrient management
- All streams except for West Run showing improvement in the last 3-5 years

Next Step : Break Out Sessions

Agricultural

Residential

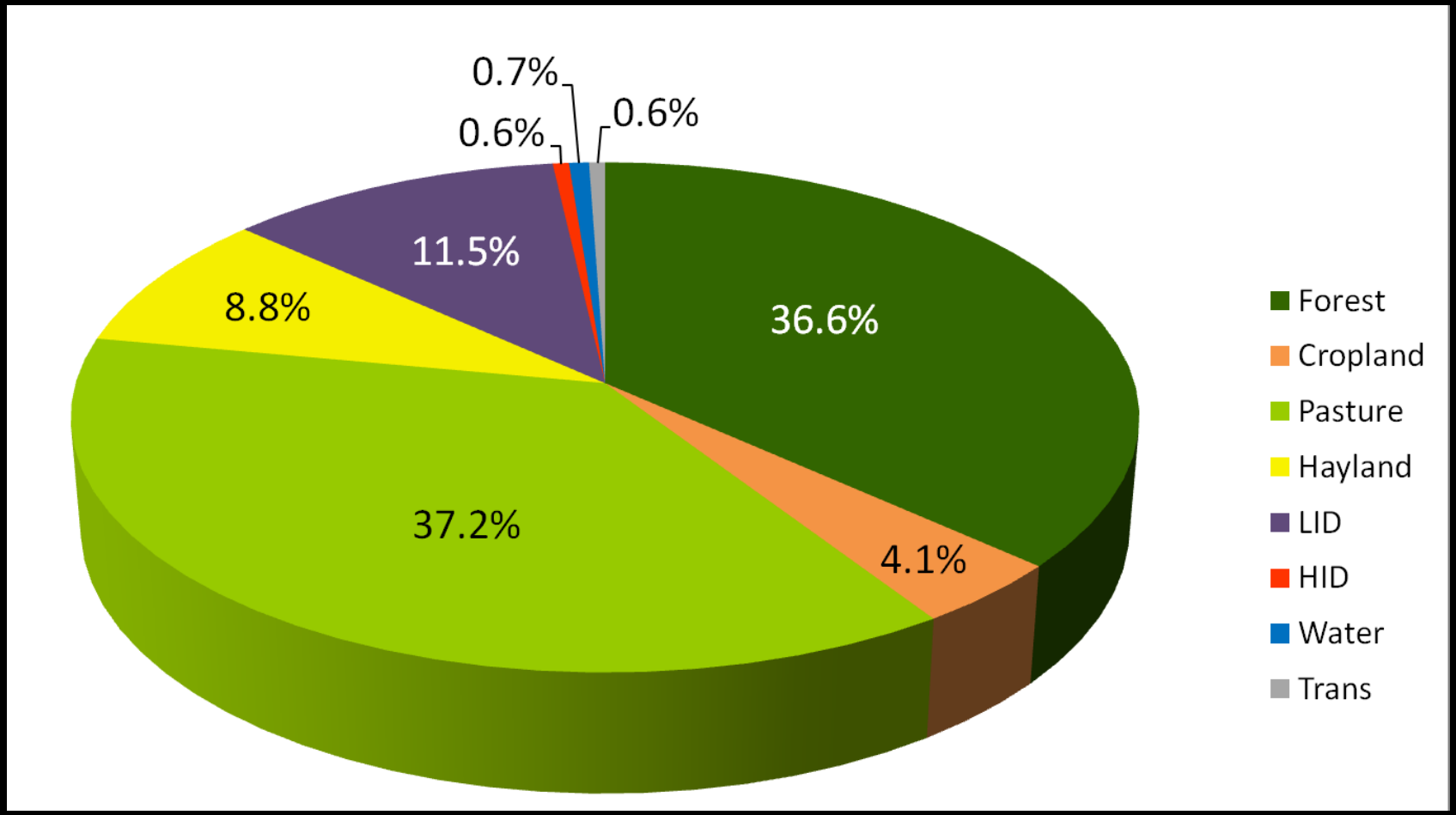
Learning about Crooked Run:

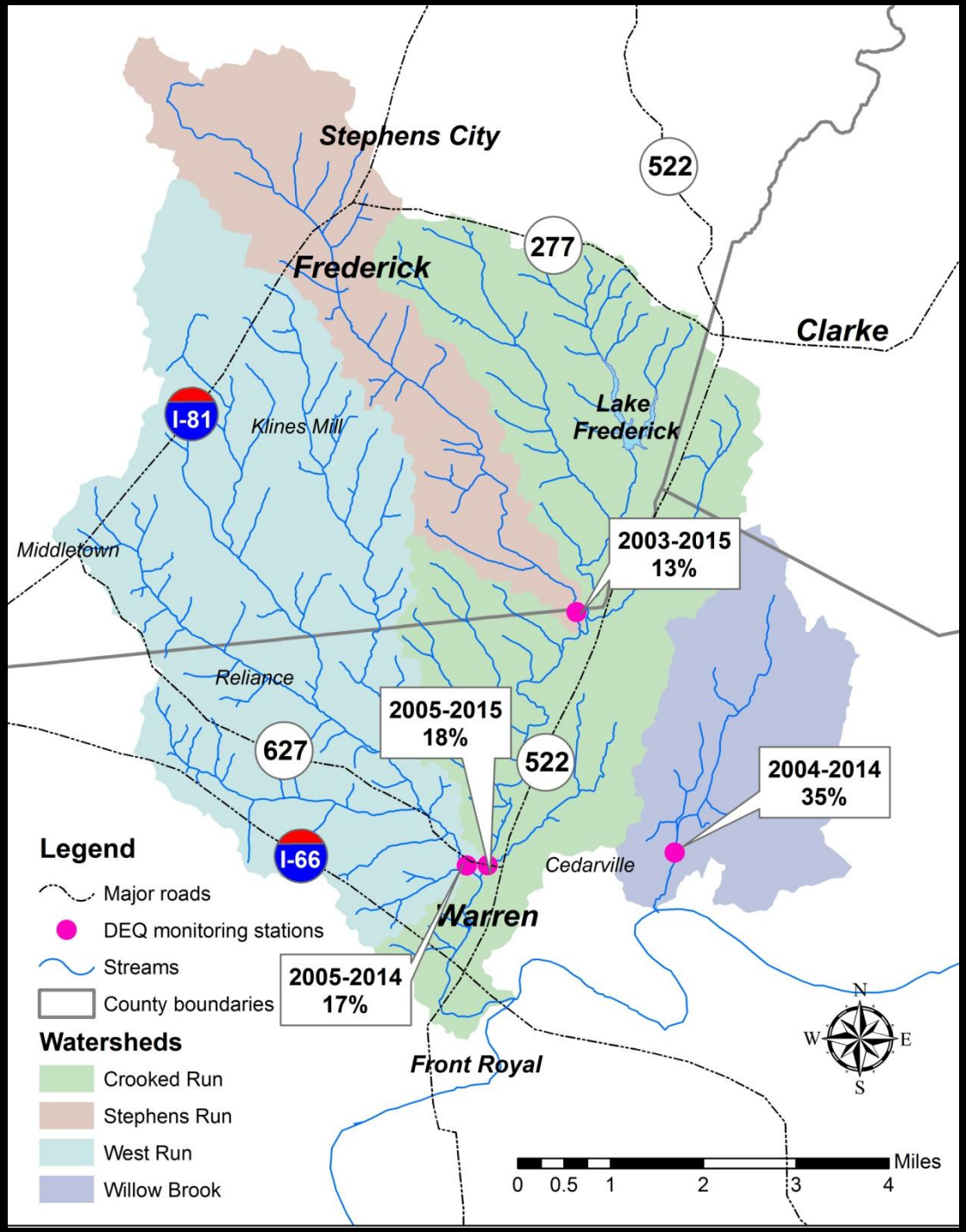
What you can contribute as a stakeholder

- General comments
  - Greatest concerns about the creeks?
  - Greatest opportunities with this project?
  - Greatest challenges we will encounter?
- Specific strategies
  - Are there particular management strategies that will work well in the community?
  - Are there strategies that should be avoided?
- Recommended outreach activities
- Potential partner organizations

Land use in the watersheds

34,680 acres total




Stephens City
522
277
Frederick
Clarke
I-81
Klines Mill
Lake
Frederick
Middletown
2003-2015
13%
Reliance
2005-2015
18%
627
522
2004-2014
35%
I-66
Cedarville
Warren
2005-2014
17%
Front Royal
Legend
Major roads
DEQ monitoring stations
Streams
County boundaries
Watersheds
Crooked Run
Stephens Run
West Run
Willow Brook
N
W
E
S
0 0.5 1 2 3 4
Miles